



2014 IAJC/ISAM Conference Program

Global Engineering:
Leading the way into the 21st Century



International Conference on
Engineering & Technology
September 25-27, 2014
Orlando, Florida

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IAJC/ISAM 2014 Conference Daily Schedule

Friday, September 26 13-24
Saturday, September 27 24-31

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Embassy Suites Hotel Map (back cover)

IAJC/ISAM Conference Registration Desk Hours

Thursday 3:00pm—7:00pm

Friday 8:30am—11:30am / 1:00pm—6:00pm

Saturday 8:00am—10:00am

The Embassy Suites hotel offers FREE breakfast (buffet), FREE Internet, FREE parking, and FREE daily receptions with open bar and snacks. Shuttle service is available to area shopping and all Central Florida

A Message from the IAJC and ISAM Presidents



Dear Conference Participants:

As IAJC President and ISAM President, we would like to welcome you to the 4th IAJC/ISAM Joint International Conference on engineering and related technologies. The conference theme, *Global Engineering: Leading the Way into the 21st Century*, reflects the reality of the need for academic global connections and partnerships. Such partnerships can provide the backbone for strategic plans for creating a better future for the next generation of students, faculty, and researchers so that they, in turn, can lead the world in the tight, competitive global markets of the 21st century.

The IAJC and ISAM Conference Executive and Advisory Boards, made up of well-known individuals from over 50 of the top universities from around the globe, have made every effort to present this high-quality joint conference and make sure that your time is well spent and productive. Please make sure to contact any board member if you have questions or need assistance. Finally, the fame city of Orlando offers an excellent conference venue. Not only does it have a rich and varied history, but it is also the top vacation destination in the world with many fun activities for all ages.

Best wishes for a pleasant stay in Orlando and a productive and successful conference.

Sincerely,

Mark Rajai, Ph.D.
IAJC President
California State University-Northridge
Phone: 818-677-5003
Email: mark.rajai@csun.edu

Alok Verma, Ph.D.
ISAM President
Old Dominion University
Phone: 757-683-3766
Email: averma@odu.edu

Message from the IAJC/ISAM Conference General Chair



As we in higher education and industry reflect back on the first decade in this new millennium, we realize that the sharing of ideas and resources is the best way for us to create a better future for the next generation of students, faculty, and researchers. In the competitive and tight global markets of the 21st century, leading companies across industry have embarked on massive reorganizations, mergers, partnerships, and all sorts of collaborative projects with their like-minded peers and rivals in order to not only survive but grow and thrive. But, as industry changes with time, so must academia. Conversely, as academic R&D efforts provide advancements in technology, so must industry provide a quick turnaround from concept to market. However, many academic organizations, journals, and conferences have been slow to adapt and provide the necessary platforms for the dissemination of knowledge.

Beginning in 2004, the editorial board of the International Association of Journals and Conferences (IAJC) embarked on groundbreaking and unprecedented efforts to establish strategic partnerships with other major rival journals and organizations to share resources and offer authors a unique opportunity to come to one conference and publish their papers in a broad selection of journals representing interests as diverse as those of the researchers and educators in fields related to engineering, engineering technology, industrial technology, mathematics, science, and teaching. These efforts resulted in an innovative model of joint international conferences that includes a variety of organizations and journals.

IAJC joint and independent international conferences have been a great success with the main conferences being held in the United States and regional, simultaneous conferences in other parts of the world. In addition to bringing people together at its conference venues, IAJC attracts myriad journals that wish to publish the best of what its attendees have to offer, thereby creating excitement in academic communities around the world. IAJC is a first-of-its-kind, pioneering organization. It is

a prestigious global, multilayered umbrella consortium of academic journals, conferences, organizations, and individuals committed to advancing excellence in all aspects of technology-related education.

Conference Statistics:

Of the submissions for this conference, there were 466 abstracts from 132 educational institutions and companies from around the world (multiple submissions from the same authors were not counted). The submissions came from 48 of the 50 U.S. states and 49 countries. After a multi-level review process, only 82 full papers and 19 abstracts were accepted for presentation at the conference and publication in the conference proceedings. This reflects an acceptance rate of about 22%, which is one of the lowest acceptance rates of any international conference.

Organizing such broad conferences is a monumental task and could not be accomplished with the help and support of the conference committee, the division/session chairs, and the reviewers. Thus, I offer my sincerest thanks to all for their hard work and dedication in the development of the outstanding 2014 conference program. I personally hope you will seek them out to thank them for their fine work.

As we continue to offer, and to strive to improve upon, these high-quality and unique conferences, we are seeking dedicated individuals to join us on the planning committee for the next conference—scheduled for fall, 2016. Please watch for updates on our website (www.IAJC.org) and contact us anytime with comments, concerns, or suggestions. On behalf of the 2014 IAJC/ISAM conference committee and IAJC Board of Directors, we thank you for participating in this great conference and hope to see you at our next conference.

Sincerely,

Philip D. Weinsier
IAJC/ISAM Conference General Chair

Conference Executive Board Members

Conference General Chair

Philip Weinsier

Bowling Green State University-Firelands

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Oregon Institute of Technology

Samson Lee

Central Michigan University

Organization Sponsors

- International Association of Journals & Conferences (IAJC)
- International Society of Agile Manufacturing (ISAM)
- The Institute of Electrical and Electronics Engineers (IEEE)
- American Society for Engineering Education (ASEE)
- Lean Institute

Journal Sponsors

- International Journal of Modern Engineering
(official and flagship journal of IAJC)
- International Journal of Engineering Research and Innovation
(official journal of IAJC)
- Technology Interface International Journal
(official journal of IAJC)
- International Journal of Agile Manufacturing
(official journal of ISAM)
- Journal of Industry and Higher Education
- International Journal of Entrepreneurship and Innovation
- Journal of STEM Education, Innovations and Research
- International Journal of Industrial Engineering & Production Research
- Management Science letters
- Visual Communications Journal
- International Transaction Journal of Engineering, Management, &
- Applied Sciences & Technologies
- International Journal of Industrial Engineering Computations
- International Journal of Enterprise Information Systems
- International Journal of Strategic Decision Sciences

University Sponsors

- Daytona State College
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- Eastern Illinois University
- Utah Valley University
- University of Bridgeport
- Texas A&M University
- Purdue University
- Purdue University-North Central
- Penn State University
- Arizona State University
- Central Connecticut State University
- North Dakota State University
- California State University-Los Angles
- Oregon Institute of Technology
- Central Michigan University
- Eastern Michigan University
- Indiana State University
- Vincennes University
- University of Memphis
- Tennessee Tech
- Middle Tennessee State University
- North Carolina A&T University
- West Virginia University
- University of North Carolina
- Boise State University
- Al Ghurair University, UAE
- Temple University
- La Salle University
- Amirkabir University of Technology

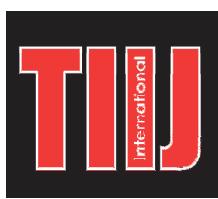
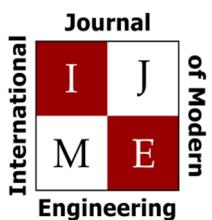
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Workshops

Workshop #1: Understanding and Teaching Statistical Process Control. A Hands-on Approach to Preparing Your Students for High-Tech Manufacturing

Friday, September 26, 1:00 - 4:00pm

Cypress #4 — FREE

Preregistration is requested to help gauge attendance.

This workshop will answer the questions: "What is Statistical Process Control (SPC)?" and "Why is it important to preparing high tech manufacturing technologists for high tech manufacturing?" We will discuss the basics of Statistical Process Control and cover the following topics using a hands on, measurement approach:

Process Variation – Why is it important

Statistical Tools necessary to employ and understand:

SPC

Mean, Median, Mode

Standard Deviation, Cp, Cpk

Control Charts

Interpreting Control Charts

The influence of a measurement system on data

Attendees will be given access to all workshop materials, presentations, reading materials, Excel templates and will also receive written materials at the workshop.

The Southwest Center for Microsystems Education will also provide links to all of its other downloadable educational materials as well, including, but not limited to, videos, lectures, access to online distance learning short course(s) which will have all the materials available. This workshop is made possible through a grant from the National Science Foundation, Dept. of Undergraduate Education Advance Technological Education program, DUE #1205138.

*Presented by Dr. Matthias W. Pleil, Southwest Center for Microsystems Education at the University of New Mexico
(mpleil@unm.edu; 505-272-7157)*

Workshop #2: An Interactive Presentation on the 10 Principles: A New Paradigm for Collaboration and Innovation

**Saturday, September 27, 8:30 - 9:30am
Cypress #4 — FREE**



What can a bohemian subculture teach us about innovation in traditional organizations? In this session, we will explore the 10 Principles of Burning Man as a philosophical framework for capturing the spirit of innovation. By combining the social and professional elements of collaborative work and actively embracing diversity, these principles reveal a new paradigm for innovation that lifts professional boundaries, enhances creative potential, and unleashes greater possibilities. These principles are relevant to practitioners because they embrace the essence of Deming's 14 points while capturing the spirit of radical, socially responsible innovation. The final half-hour of this session will feature an interactive exercise based on one of the 10 Principles to help you identify the unique gifts you can bring to your organization and your community.

*Presented by Dr. Nicole Radziwill (radziwnm@jmu.edu),
James Madison University, and Dr. Morgan Benton
(bentonmc@jmu.edu), James Madison University*

Meals, Breaks, Receptions

Note: Friday lunch is not included in “Full Conference” registrations. However, IAJC attendees will receive a 20% discount at the hotel restaurant.

Thursday, September 25

- 5:30 — 7:00pm
Daily reception with open bar and snacks for Embassy Suites guests

Friday, September 26

- 8:00 — 9:30am
Full breakfast for Embassy Suites guests
- 11:30 — 1:00
Executive Board Lunch
- 2:45 — 3:00
Refreshment break
- 5:30 — 7:00pm
Daily reception with open bar and snacks for Embassy Suites guests
- 7:00 — 8:30pm
Dinner banquet and awards ceremony for all conference attendees

Saturday, September 27

- 7:30 — 8:30am
Full breakfast for Embassy Suites guests
- 10:30 — 10:45
Refreshment break

Session Legend

ENG Engineering

EDU Higher Education

MFG Manufacturing

ITC Information Technology, Business, Entrepreneurship, and Computer Science

Daily Schedule – Friday

Friday, September 26, 2014

9:30am–11:30am Magnolia A

EDU 301: Topics in STEM Education

Session Chair: Mekonnen Tesfu

(Hamburg University of Technology—GERMANY)

INVITED SPEAKER #134

What Makes The Difference for Under-represented Students Staying in STEM Majors
Rosalyn Hobson, Virginia Commonwealth University

Paper #012

The Academic Impact of Majoring in Technology for First-Generation College Students

Shirl Donaldson, Purdue University; Ryan Favors, Purdue University

Paper #068

The Relationship of Active Learning-based Courses and Student Motivation for Pursuing STEM Classes

Mohammadjafar Esmaeili, Eastern Michigan University; Ali Eydgahi, Eastern Michigan University

Paper #122

Integrating Engineering Design Process in K-12 Curriculum in Virginia with Project-based Learning

Alok Verma, Old Dominion University; Greg Selby, Old Dominion University; Nina Brown, Old Dominion University; Vukica Jovanovic, Old Dominion University; Nathan Luetke, Old Dominion University

Abstract #141

Using Competition to Bring Students to STEM

Alka Harriger, Purdue University; Brad Harriger, Purdue University; Ron Baysinger, Phoenix Contact; Arnold Offner, Phoenix Contact; Patty Marrero, Phoenix Contact

9:30am–11:30am Cypress 1

MFG 101: Topics in Manufacturing I

Session Chair: Mandar Khanal

(Boise State University)

Daily Schedule – Friday

Paper #039

Improving the Roller Shaft Subassembly

Process using Discrete-event Modeling and Simulation: A Case Study

Ali Alavizadeh, Indiana University Purdue University-Fort Wayne; Robert Palevich, Indiana University Purdue University-Fort Wayne

Paper #070

Influence of Some Process Parameters on Build Time, Material Consumption, and Surface

Roughness of FDM Processed Parts: Inferences Based on Taguchi Design of Experiments

Fahraz Ali, University of the West Indies (TRINIDAD and TOBAGO); Boppana Chowdary, University of the West Indies (TRINIDAD and TOBAGO); Justin Maharaj, Caribbean Industrial Research Institute, University of the West Indies (TRINIDAD and TOBAGO)

Paper #073

A Multi-agent-based Approach to Dynamic Scheduling of Machines and Automated Guided Vehicles (AGV) in Manufacturing Systems by Considering AGV Breakdowns

Vahit Kaplanoğlu, University of Gaziantep (TURKEY); Cenk Şahin, Cukurova University (TURKEY); Adil Baykasoğlu, Dokuz Eylül University (TURKEY); Rizvan Erol, Cukurova University (TURKEY); Alper Ekinci, University of Gaziantep (TURKEY); Melek Demirtaş, Cukurova University (TURKEY)

Abstract #103

A Methodology for Optimal Tuning of PID Controllers Subject to Process Constraints

Constantine Tzouanas, Clear Lake High School; Vassilios Tzouanas, University of Houston-Downtown

Paper #121

Stochastic Modeling and Validation of Three-tier Supply Chains using Multiple Tools

Alok Verma, Old Dominion University

9:30am—11:30am Cypress 2

ENG 201: Topics in Construction—Concrete and Flexible Pavements

Session Chair: Emily Crawford

(Southern Wesleyan University)

Daily Schedule – Friday

INVITED SPEAKER #124

Bond Strength of PCC Pavement Repairs Using Metakaolin-based Geopolymer Concrete

Hani Alazani, North Dakota State University; Mijia Yang, North Dakota State University

Paper #018

Evaluation of Initial IRI Values as Acceptance Criteria for Flexible Pavements

Don Chen, University of North Carolina-Charlotte; Michael Dye, University of North Carolina-Charlotte

Paper #020

Evolution of Reinforced Concrete Thin Shells: The Impact on Architectural and Building Structures (1920-1970)

Christian Hyeng, North Carolina A&T State University; S.N. Krivoshapko, Peoples' Friendship University of Russia (RUSSIA)

Paper #031

Construction of a Full-scale Recycled Brick Masonry Aggregate Concrete Test Pavement

Tara Cavalline, UNC Charlotte; Dallas Schwerin, UNC Charlotte; David Weggel, UNC Charlotte; Chuck McClure, Parkway Concrete

Paper #033

Compressive Performance of Recycled Aggregate Mortar

Thomas Nicholas, UNC Charlotte; Paul Radford, UNC Charlotte; Tara Cavalline, UNC Charlotte; Anthony Brizendine, UNC Charlotte

9:30am–11:30am Cypress 3

ENG 202: Topics in Alternative Energy, MEMS, and Hybrid Energy Storage

Session Chair: John Kugler
(Chicago Teachers Union)

Paper #014

A Review of the Commercial Trainers and Experiment Kits for Teaching Renewable Energy Manufacturing

Wangping Sun, Oregon Institute of Technology; Bradley Kramer, Kansas State University; Zhichao Li, North Carolina A&T University; Joe Stuart, Oregon Institute of Technology

Daily Schedule – Friday

Paper #019

Evaluation of the Silicon on Glass Micro-fabrication Process for MEMS Accelerometers

Thomas White, Central Michigan University; Kevin Petsch, Central Michigan University; Tolga Kaya, Central Michigan University

Paper #056

Plug and Play Microsystems (MEMS) Technology Into Your Engineering and Technology Program

Matthias Pleil, University of New Mexico

Paper #089

Vertical Axis Wind Turbine Performance Prediction High and Low Fidelity Analysis

Franklyn Kanyako, Masdar Institute of Science and Technology (UAE); Isam Janajreh, Masdar Institute of Science and Technology (UAE)

Abstract #106

Modeling and Simulation of Hybrid Energy

Storage Systems

Biswajit Ray, Bloomsburg University of Pennsylvania

9:30am–11:30am Cypress 4

ITC 401: Topics in Medical Computing

Session Chair: Mahmoud Al-Odeh

(Bemidji State University)

Paper #062

Scratch for Arduino: Exergaming Development

Alka Harriger, Purdue University; Mayari Serrano, Purdue University

Paper #065

Using Flowchart Programming to Create Exergames

Mayari Serrano, Purdue University; Alka Harriger, Purdue University

Paper #076

A Prototype Distributed Framework for Identification and Alerting for Medical Events in Home Care

Gary Holness, Delaware State University; Leon Hunter, Delaware State University

Paper #078

Wearable Ambulatory 2-Channel EEG Neuro-monitor Platform for Real-life Engagement Monitoring Based on Brain Activities at the Prefrontal Cortex

Daily Schedule – Friday

Sergi Consul-Pacareu, University of Memphis; Ruhi Mahajan, University of Memphis; Md Nazmus Sahadat, University of Memphis; Bashir Morshed, University of Memphis

Abstract #143

Applied Engineering Models Suggesting Strategies to Reduce Causalities During a School Active Shooter Event

Eric Dietz, Purdue University; Adam Kirby, Purdue University; Charles Anklam, Purdue University; Filip Sharevski, Purdue University

1:00pm–2:45pm Magnolia A

EDU 302: Topics in Education—Capstone Projects and e-learning

Session Chair: Alex Johnson

(University of North Dakota)

Paper #003

Use of Mobile Application Development Technologies in Capstone Projects

Shuju Wu, Central Connecticut State University; Xiaobing Hou, Central Connecticut State University; Karen Tracey, Central Connecticut State University

Paper #037

Open Source, Multilevel, Interactive Programmable Logic Controller Software Development for High School Students, Two- and Four-year Colleges, and Displaced Workers

Aleksandr Sergeyev, Michigan Technological University; Scott Kuhl, Michigan Technological University; Kurt Kalenauskas, Michigan Technological University; Bochao Li, Michigan Technological University

Paper #048

Capstone Project: PLC Control System with Integrated PID Controller for Control System Optimization

Abdullah Atwah, Michigan Technological University; Ian Bumgardner, Michigan Technological University; Mohammed Bushlaibi, Michigan Technological University; Steven Castello, Michigan Technological University; Joshua Erickson, Michigan Technological University; Aleksandr Sergeyev, Michigan Technological University; Mohsen Azizi, Michigan Technological University

Daily Schedule – Friday

Paper #052

Modifying the Curriculum of an Engineering Technology Program to meet the Needs of Local Manufacturing Consortium

Mauricio Torres, Northern Kentucky University;

Morteza Sadat-Hossieny, Northern Kentucky University

Paper #057

Use of Remote Laboratories for Education in Industrial Processes and Automation

Jose Avila, Military University Nueva Granada (COLOMBIA); Dario Amaya, Military University Nueva Granada (COLOMBIA)

1:00pm–2:45pm Cypress 1

ENG 203: Topics in Engineering I

Session Chair: Sadeta Krijestorac

(Daytona State College)

Paper #015

Rotational Machine Fault Detection with Ensemble Empirical Mode Decomposition Based on a Three Orthogonal Channel Sensor

Li Tan, Purdue University-North Central; Alexander Mussa, Purdue University-North Central; Justin Poling, Purdue University-North Central; Kai Justice, Purdue University-North Central; Hongbo Xu, Nanjing University of Science and Technology (CHINA)

Paper #045

Effects of Sound Wave Transmission Pathways on Acceptable Noise Levels

Bankole Fasanya, North Carolina A&T State University

Paper #086

Gasification of Two Untapped Resources: El-Lajjun Oil Shale and Municipal Solid Waste

Idowu Adeyemi, Masdar Institute of Science and Technology (UAE); Isam Janajreh, Masdar Institute of Science and Technology (UAE)

Abstract #104

Optimizing Performance of a Speech Analysis System for Orofacial Muscle Activity Data

Shonda Bernadin, Florida A&M University-Florida State University; Tejal Udhani, Florida State University; Megan MacPherson, Florida State University

Daily Schedule – Friday

Paper #144

Numerical Simulation of Direct Contact

Membrane Desalination (DCMD)

Isam Janajreh, Masdar Institute of Science and Technology (UAE); Dana Suwan, Masdar Institute of Science and Technology (UAE)

1:00pm–2:45pm Cypress 2

ENG 204: Topics in Electronics—DAQ, Hallbach Arrays, and Artificial Neural Systems

Session Chair: Ben Zoghi (Texas A&M University)

Paper #042

HDL-based Implementation of a Novel Dynamic Reconfigurable Data Acquisition Scheduler-on-Chip (SchoC)

Mohammed Abdallah, State University of New York

Paper #088

Design and Test of an Ironless Axial Flux Permanent Magnet Machine using a Hallbach Array

Todd Batzel, Penn State University-Altoona College; Andrew Skraba, Penn State University-Altoona College; Ray Massi, Penn State University-Altoona College

Paper #090

Optimal Placement of Phasor Measurement Units for Maximum Network Observability Using Python-Gurobi

Anil Khanal, North Carolina A&T State University; Emmanuel Oleka, North Carolina A&T State University; Ali Osareh, North Carolina A&T State University; Gary Lebby, North Carolina A&T State University

Paper #091

Evolving Artificial Neural Systems for Short-term Power System Load Forecasting

Camille Koch, North Carolina A&T State University; Joshua Murphy, North Carolina A&T State University; Charles Winley, North Carolina A&T State University; Gary Lebby, North Carolina A&T State University; Ali Osareh, North Carolina A&T State University

Abstract #101

Development of a Hybrid Current Controller for Electric Motor Drives

Shiyoung Lee, Penn State University-Berks

Daily Schedule – Friday

1:00pm–2:45pm Cypress 3

ITC 402: Topics in Information Technology—Security and Risk Management

Session Chairs: **Faruk Yildiz** (Sam Houston State University); **Marla Rogers** (nTelos Wireless)

INVITED SPEAKER #132

Big Data—Theoretic Advancements for Probabilistic Risk Assessment

Zahra Mohaghegh, University of Illinois at Urbana-Champaign

Paper #008

A Comprehensive and Open Framework for Classifying Incidents Involving Cyber-Physical Systems

William Miller, Brigham Young University; Dale Rowe, Brigham Young University; Richard Helps, Brigham Young University; Ross Woodside, Brigham Young University

Paper #043

Leveraging Next-Generation Virtualization Technologies for Advanced Malware Analysis in the Classroom

Dale Rowe, Brigham Young University; Laura Wilkinson, Brigham Young University

Paper #081

Risk Management Framework in Cloud Computing Security in Business and Organization

Ibraheem Kateeb, North Carolina A&T State University; Madallah Almadallah, North Carolina A&T State University

Paper #087

Information Security Risks Awareness Based on Categories

Syed Raza, Trenholm State Technical College

1:00pm–4:00pm Cypress 4

Workshop #1: Understanding and Teaching Statistical Process Control. A Hands-on Approach to Preparing Your Students for High-tech Manufacturing

(FREE—Preregistration is requested to help gauge attendance)

Matthias Pleil, Southwest Center for Microsystems Education at the University of New Mexico

Daily Schedule – Friday

2:45pm–3:00pm

Refreshment Break

3:00pm–4:45pm Magnolia A

EDU 303: Topics in Education I

Session Chair: Bashir Morshed

(University of Memphis)

Paper #007

Using Strategic Partnerships to Deliver Reality-based Education

Sudershan Jetley, Bowling Green State University; Anthony Palumbo, Bowling Green State University

Paper #028

Value Stream Mapping: Recreating an Industrial Environment in an Educational Setting

Mahmoud Al-Odeh, Bemidji State University; Alister McLeod, Indiana State University; M. Affan Badar, Indiana State University

Paper #038

Industry-driven Power Engineering Curriculum Development in an Electrical Engineering

Technology Program

Aleksandr Sergeyev, Michigan Technological University; Nasser Alaraje, Michigan Technological University

Paper #055

Parking and Street Lighting with Solar and Wind Energy Powered Retrofitted LED Lights

Faruk Yildiz, Sam Houston State University

Paper #072

Managing Course Enrollment Exceptions using Web-Based Forms

Sam Khouri, Athens State University; Donald Staub, İŞIK University (TURKEY); Mike Haghghi, Athens State University; Stacie Hughes, Athens State University

3:00pm–4:45pm Cypress 1

MFG 102: Topics in Manufacturing II

Session Chair: Li Tan

(Purdue University North Central)

Daily Schedule – Friday

INVITED SPEAKER #128

Validation and Visualization of Objects used for the production of Direct Digital Manufacturing Components or 3D Printed Models

Rafael Obregon, Western Illinois University

Paper #001

3D Design Process for Manufacturing and Assembly: Table Top Tools for Incremental Continuous Improvement (Kaizen)

Isam Badawi, University of Hail (SAUDIA ARABIA); Magesh Chandramouli, Purdue University Calumet

Paper #004

Applications of Digital Manufacturing in Manufacturing Process Support

Vukica Jovanovic, Old Dominion University; Mihael Debevec, University of Ljubljana (SLOVENIA); Niko Herakovic, University of Ljubljana (SLOVENIA); Alok Verma, Old Dominion University; Mileta Tomovic, Old Dominion University

Paper #066

Technology Driven Innovation — Strengthening Industry and Academia Partnerships for Advanced Manufacturing Gains

Alton Kornegay, North Carolina A&T State University; Bankole Fasanya, North Carolina A&T State University; Dominick Fazarro, University of Texas-Tyler; James Wright, University of Texas at Dallas; Gerald Watson, North Carolina A&T State University; Evelyn Sowells, North Carolina A&T State University

Paper #082

Autonomation—Future of Manufacturing

Kwabena Boakye-Adjei, Central Connecticut State University; Ravindra Thamma, Central Connecticut State University; Daniel Kirby, Central Connecticut State University

3:00pm—4:45pm Cypress 2

ENG 205: Topics in Construction—Human Behavior and Traffic Forecasting

Session Chair: Youakim Kalaani
(Georgia Southern University)

INVITED SPEAKER #125

Human Behavior and Low Energy Architecture: Linking Environmental Adaptation, Personal Comfort, and Energy Use in the Built Environment

Daily Schedule – Friday

Jin Wen, Drexel University; Jared Langevin, Drexel University

Paper #006

Critical Thinking and Technical Decisions

Barry Hoy, Saint Leo University

Paper #029

Integrating Ethics by Using Cases

Marilyn Dyrud, Oregon Institute of Technology

Paper #035

Development of a Web-based 3D Visualization and Cluster Computing System for Disaster Management

Ge Jin, Purdue University Calumet; Barbara Nicolai, Purdue University Calumet; Chuck Winer, Purdue University Calumet; Gerald Dekker, Purdue University Calumet; John Moreland, Purdue University Calumet

Paper #058

State-space Models with Kalman Filtering for Freeway Traffic Forecasting

Brian Portugais, Boise State University; Mandar Khanal, Boise State University

3:00pm–4:45pm Cypress 3

ENG 206: Topics in Alternative Energy and Sustainability

Session Chair: Dale Rowe

(Brigham Young University)

Paper #010

Automation of Biodiesel Reactor for the Production of Biodiesel from WVO Using a PLC and Small-scale Continuous Ultrasonic Processor

Chase Malone, Tennessee Technological University; Matthew Holman, Tennessee Technological University; Brian Katz, Tennessee Technological University; Ahmed Elsawy, Tennessee Technological University

Paper #067

Analysis of Wind-Power Generation with Wind-guide Attachment

Ulan Dakeev, University of Michigan-Flint; Connie Lam, University of Michigan-Flint; James Pung, University of Michigan-Flint

Daily Schedule – Friday & Saturday

Paper #084

Numerical Simulation of Transesterification and Sensitivity Study

Isam Janajreh, Masdar Institute of Science and Technology (UAE); Mohamed Almusharrekh, Masdar Institute of Science and Technology (UAE)

Paper #085

Effect of Process Parameters on Basification:

Review

Isam Janajreh, Masdar Institute of Science and Technology (UAE); Idowu Adeyemi, Masdar Institute of Science and Technology (UAE)

Abstract #142

A Multi-Agent Based Framework for a Closed Loop Supply Chain Material Flow and Transportation Planning System

Yusuf Kuvvetli, Çukurova University (TURKEY); Cenk Şahin, Çukurova University (TURKEY); Rizvan Erol, Çukurova University (TURKEY); Adil Baykasoğlu, Dokuz Eylül University (TURKEY); Vahit Kaplanoğlu, Gaziantep University

Saturday, September 27, 2014

8:30am–10:30am Cypress 1

ENG 207: Topics in Engineering II

Session Chair: Vassilios Tzouanas

(University of Houston-Downtown)

INVITED SPEAKER #123

Multilayer Composite Insulation for Advanced Onboard Performance Monitoring System of Spacecraft Structures in Extreme Temperature Environments

Ying Huang, North Dakota State University

Paper #013

A Door Motion Energy Harvesting System for Powering an Electronic Door Lock

Dale Litwhiler, Penn State Berks; Thomas Gavigan, Penn State Berks

Paper #051

Automating a Heat Shrink Tubing Process

Shahrokh Yousefi-Darani, University of North Texas; Nihal Joshua, University of North Texas; Huseyin Bostanci, University of North Texas; Enrique Barbieri, University of North Texas

Daily Schedule – Saturday

Paper #059

A Study on Computational of Flow Modeling

Sabah Tamimi, Al Ghurair University (UAE)

Paper #083

LabView-based Navigational Aids to Predict the Position of Automated Guided Vehicles with Ultrasound and Radio Frequency Sensing

Ravindra Thamma, Central Connecticut State University; Gregory Marshall, Charter Oak State College; Hugo Garcia, University of Leon (SPAIN); Mark Rajai, California State University-Northridge

8:30am–10:30am Cypress 2

ITC 403: Topics in Information Technology—FEA Software and Desktop VR Frameworks

Session Chair: Ali Eydgahi

(Eastern Michigan University)

INVITED SPEAKER #130

Regulatory Compliance Software Development: Inevitability, Methods, Hopes and Concerns

Peter Knoke, University of Alaska-Fairbanks

Paper #036

Development of Casual 2D Game Laboratory Exercises in Introductory Computer Graphics Programming Course

Ge Jin, Purdue University Calumet; Magesh Chandramouli, Purdue University Calumet

Paper #050

Geometry and Graphics for Developing a Multi-modal Multidimensional Desktop Virtual Reality framework

Magesh Chandramouli, Purdue University Calumet; Gary Bertoline, Purdue University; Isam Badawi, University of Hail (SAUDI ARABIA)

Abstract #113

Evaluation of Finite-Element Analysis Software Packages by Accuracy and Efficiency

Samson Lee, Central Michigan University

Abstract #117

Virtual Simulation on the Web

Samir Akhrouf, Adel Merabet, Djamel Boubetra, Larbi Selmani, Boubetra Abdelhak, Bordj Bou Arreridj University (ALGERIA)

Daily Schedule – Saturday

8:30am–10:30am Cypress 3

ITC 404: Topics in Information Technology—Organizational Redesign and Project Management

Session Chair: Tara Cavalline

(University of North Carolina-Charlotte)

Paper #046

A Case Study: Redesigning the Organizational Structure of a Project-Driven Company

Mohsen Hamidi, Utah Valley University; Tammy Parker, Utah Valley University; Kambiz Farahmand, North Dakota State University

Paper #061

PMO, Its Impact on Project Success, and Measuring Its Performance

Saurabh Godbole, Purdue University

Abstract #107

Bench-top and Industrial Metal Lathes: Different and Similar, but Needed in Technology Education

Alex Johnson, University of North Dakota; Dave Yearwood, University of North Dakota

Abstract #109

The Cost of Quality in Military Information Technology Products

Kevin Dittman, Purdue University; Robert Bott, Purdue University

Abstract #145

Organizational Impacts of Participation in Development of Industry-Level Technology Roadmaps

Austin Cheney, Eastern Illinois University; Kenneth Pence, Vanderbilt University; David Dilts, Dilts & Partners, LLC

8:30am–10:30am Cypress 4

Workshop #2: An Interactive Presentation on the 10 Principles: A New Paradigm for Collaboration and Innovation (FREE)

Nicole Radziwill and Morgan Benton, James Madison University

Daily Schedule – Saturday

8:30am–10:30am Cypress 5

EDU 304: Topics in Education II

Session Chair: Ben Zoghi

(Texas A&M University)

INVITED SPEAKER #133

Interdisciplinary, Industry-University, and Flipped Classrooms in Engineering Education: A First-Hand Report

Lunal Khuon, Villanova University; Kevin Buckley, Villanova University; Karl Zurn, Villanova University/Florida Research Instruments; J. Brooks Zurn, Villanova University/Florida Research Instruments; Edward Char, Villanova University

Paper #021

Validating the Use of Teaching Effectiveness Data in the Improvement of Teaching

Jess Godbey, Jacksonville State University; Terry Marbut, Jacksonville State University

Paper #022

Underwater Remotely Operated Vehicle

Manufacturing Assembly and Training using X3D/Virtual Reality Modeling Language

Magesh Chandramouli, Purdue University Calumet; Isam Badawi, University of Hail (SAUDI ARABIA); Michael Ziller, Purdue University Calumet; Mohamed El Ashmawy, Suez Canal University (EGYPT); Mohammad Zahraee, Purdue University Calumet

Paper #034

Undergraduate Research Scholar: The First Step Towards a Hybrid Lecture-Based and Inquiry/Research-Based Undergraduate Engineering Program

Rami Haddad, Georgia Southern University; Youakim Kalaani, Georgia Southern University

Paper #074

Music Touring Logistics Managers' Critical Skill Set Requirements

Kim LaFevor, Athens State University; Sam Khoury, Athens State University; Charles Roberts, Athens State University

10:30am–10:45am

Refreshment Break

Daily Schedule – Saturday

10:45am–12:30pm Cypress 1

ITC 405: Topics in Information Technology—Business Intelligence and Decision Making

Session Chair: Mohammed Abdallah (State University of New York Institute of Technology)

INVITED SPEAKER #135

A Critical Thinking Aspect of Systems Thinking versus Analytical Thinking

Nicholas Twigg, Coastal Carolina University

Paper #026

The Future of Business Intelligence

Ibraheem Kateeb, North Carolina A&T State University; Shahbaz Humayun, North Carolina A&T State University; Dalal Bataweel, North Carolina A&T State University

Paper #069

The Evolution of Business Intelligence

Ibraheem Kateeb, North Carolina A&T State University; Dalal Bataweel, North Carolina A&T State University

Paper #071

Perceptions of Employers Towards Hiring

Ex-Offenders with Online Degrees

Emily Crawford, Southern Wesleyan University

Abstract #119

Systematic Integration of Computer Simulation and Laboratory Tests for Cost Effective and Valid Experimentation

Mekonnen Tesfu, Cooperative State University of Baden-Württemberg (GERMANY)

10:45am–12:30pm Cypress 2

ENG 208: Topics in Construction—Flooding and Evacuation Modeling

Session Chair: John Kugler

(Chicago Teachers Union)

INVITED SPEAKER #129

Flooding Impacts on Communities

Roger Ruggles, Lafayette College

Daily Schedule – Saturday

Paper #017

Evacuation Database Module: Residence Inspection Process

Kimberly Spoa-Harty, Purdue University Calumet; Barbara Nicolai, Purdue University Calumet

Paper #044

Manufacturing Problem Solving in a Job Shop: Research in Layout Planning

Abdullah Sayed, Purdue University Calumet; Lash Mapa, Purdue University Calumet

Paper #047

The Impact of Project Delivery Methods used on Public Highway-Rail Intersection Projects in New York State

Osileke Osipitan, New York State Department of Transportation; Musibau Shofoluwe, North Carolina A&T State University

Paper #053

The Concept and Methodology for Development of Effective Human Reliability Data-Banks in Road Transportation

Khashayar Hojjati-Emami, University of Ottawa (CANADA); Balbir Dhillon, University of Ottawa (CANADA); Kouroush Jenab, La Salle University

10:45am–12:30pm Cypress 3

ITC 406: Topics in Medical Technology—Identity Theft and Drug Delivery Systems

Session Chair: Austin Cheney

(Eastern Illinois University)

INVITED SPEAKER #138

Micro-flow Cytometry using Photonic Crystals

Justin Stewart, University of South Florida; Anna Pyayt, University of South Florida

Paper #025

Medical Data Breaches

Susan Fowler, Purdue University; Samuel Liles, Purdue University

Paper #060

Optimality Identification in Epidemiology using Neural Networks

Samir Talssi, Ben M'sik, Hassan II University (MOROCCO); Noura Yousfi, Ben M'sik, Hassan II University (MOROCCO)

Daily Schedule – Saturday

Paper #077

Stimuli-controlled Drug Delivery System Development with Implantable Biocompatible Chitosan Microbeads

Ankita Mohapatra, University of Memphis; Md Sahadat, University of Memphis; Bashir Morshed, University of Memphis; Gregory McGraw, University of Memphis; Alex Hoban, University of Memphis; Jessica Jennings, University of Memphis; Warren Haggard, University of Memphis; Joel Bumgardner, University of Memphis; Sanjay Mishra, University of Memphis

Abstract #120

An Automated Real-time Monitoring System for the Study of Seeds Biology

Saleh Sbenaty, Middle Tennessee State University; Thiruparan Balachandran, Proteus Digital Health Inc.; Jeffrey Walck, Middle Tennessee State University

10:45am–12:30pm Cypress 4

EDU 305: Topics in Education III

Session Chair: Mandar Khanal

(Boise State University)

INVITED SPEAKER #131

An Innovative Approach to Professional Practice Using a Culminating Undergraduate Experience

David Foster, Kettering University

Paper #009

Ten Year Evolution of an Accredited, Multisite Bachelors in Biomedical Engineering Technology (BBET) Program

Chad Kennedy, DeVry University; William Phillips, DeVry University; Anup Majumder, DeVry University; Abour Cherif, DeVry University; Robert Aron, DeVry University

Paper #032

Engineering Management: University-Industry Partnerships Create Business-savvy Scientists

Saeed Foroudastan, Middle Tennessee State University; Dianna Prince, Middle Tennessee State University

Daily Schedule – Saturday

Paper #049

Addressing New Skills Needs for the Automotive Industry through a Motorsports Educational Pathway

*Vukica Jovanovic, Miletta Tomovic, Old Dominion
University; Alok Verma, Old Dominion University;
Nathan Luetke, Old Dominion University; Steve
Branch, Patrick Henry Community College*

Abstract #108

The Metallurgical Challenge: A Meaningful Learning Activity

*Alex Johnson, University of North Dakota; Dave
Yearwood, University of North Dakota*

Abstract #115

Trends in Undergraduate Enrollment in Engineering and Computer Science

Noureddine Bekhouche, Jacksonville State University

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